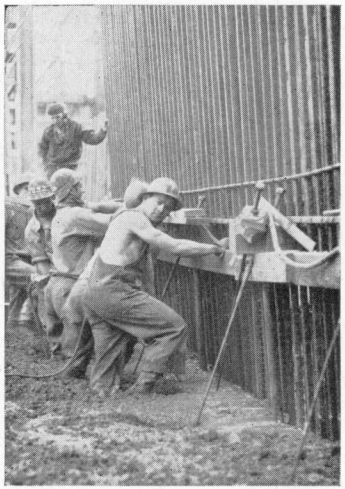
113 Box Cars of Cement Handled in a Single Day

THE SKILL of the mixing man, a never-ending fascination, he manipulated the maze of levers, thus measuring the washed sand and gravel, cement, and even the water, which went into the electric-powered mixers. Then, the buckets were filled and started on their course to the section where the pouring was handled.

Everywhere one turned was a mechanical contrivance which facilitated the work of man. Electric shovels and conveyors moved 25,000 cubic yards of pit-run sand and gravel in a day to aid in stepping up the mixing and subsequent pouring of the concrete. The bulk cement was transported to the dam site in railroad boxcars. Upon arrival at their destination, the cars were emptied by a machine which blew the cement through a hose and pipe to the storage for the mixers. As much as 113 cars a day were handled in this manner, again showing the scope of the operations which went into the cascade of masonry. A world record of 20,684 yards of concrete was established in a single day as the output of the mixing plant. Eight massive mixers received their four-yard capacities and after a thorough mixing, dumped them into the steel buckets through the remote control system handled by the tower man. The huge overhead cranes conveyed the eight-ton batches of concrete. Directions for handling each load and the dumping operation was the responsibility of a telephone signalman "on location." To facilitate the spread of the raw concrete after its dumping, "vibrators" were used by the puddlers who waded knee-deep in the rich mixture in the spreading process for the 50-foot squares.



Cement Stored In Silo

The squares were built up in column formation, in tiers or terraces of five-foot lifts in movable forms. Sand for the concrete mixture was obtained from a pit one and one-half miles below the dam and about 1,000 feet above the river. In the process of delivering the pit-run material, boulders too large to be handled on the power belt were ejected by means of grizzlies. The conveyor belt carried the sand and gravel from any part of the pit to a raw stock pile above the processing plant. There it was segregated in four sizes and from this selection was drawn the mixture required for the "mud," as concrete is termed in its pouring stage. The silos in which the cement was stored after being transported to the dam from four manufacturing plants were the scene of blending the raw material to assure uniformity and color before it was added to the sand and gravel.

Due to the fact that the concrete which went into the dam at various temperatures far above the values finally desired, a cooling process was necessary to avoid slow shrinkage. This, then, became a major part of the construction operation plan.